

Purpose: Processes and peer data are available to address patient satisfaction in the inpatient setting, but evaluating satisfaction in the outpatient setting has been historically over-looked. Our outpatient apheresis unit has established a mechanism to assess patient satisfaction and address the unobserved needs of our patients.

Methods: We have developed patient satisfaction cards that are given to patients upon completion of their procedure. Patients have the opportunity to rate their care by answering the following questions:

- Was the procedure thoroughly explained by the apheresis staff?
- Were your needs met during the procedure?
- Were you treated in a courteous and professional manner?
- Can you please rate the overall apheresis experience?

Ratings are on a scale from 1 to 5 with 1 being 'very poor' to 5 being 'very good'. Patients are also given the opportunity to provide comments regarding their procedure and the entire apheresis process. The self-addressed scorecards are sent directly to our program's quality management coordinator for review and evaluation. Survey participants are anonymous with names being optional.

Results: The goal of our hospital is to have a 'good' or 'very good' response on 90% of all patient satisfaction surveys. Our goal is to exceed the needs of each patient and stay in-line with the hospital's desired goal. Tabulated results are reviewed with the apheresis staff and are presented quarterly at our transplant program's quality management meetings. Results and comments are posted within the apheresis unit for continuous visualization of patient satisfaction. Comments for improvement are entered into our unit's complaint log and are reviewed during our department meetings.

Conclusion: Improved patient satisfaction is a high priority at our institution. Patient satisfaction assessment is an excellent mechanism for quality improvement activities. Evaluation of care, planning for improvement and documentation of actions taken are a required quality improvement activities for FACT accreditation for our blood and marrow collection facility. Comment cards give our patients an opportunity to express their appreciation for the care provided by our staff. This provides an excellent affirmation of a job well done.

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GROWTH OF A BMT UNIT IN TOUGH ECONOMIC TIMES: SUCCESS WITH A STRUCTURED PROGRAM AND INNOVATIVE SOURCES OF FUNDING

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In the past year, the Blood and Marrow Transplant (BMT) program at our NCI-designated Cancer Center increased its inpatient bed capacity by 80% and additional nursing staff was needed. Given the challenges of the nursing shortage, the present economic climate and the reality that nurses with BMT experience are uncommon, the Director of BMT and Critical Care Nursing, the BMT Clinical Nurse Specialist (CNS) and the BMT Patient Care Manager (PCM) formulated a plan to recruit and orient nurses to meet our increased need and sought novel ways to fund this initiative.

Safe and effective BMT nursing requires excellence in assessment, critical thinking and care of acute and critical complications as well knowledge in complex BMT treatment plans and skills in communication with patients, families and an interdisciplinary team. BMT Nursing Leadership created a structured BMT Internship Program to support successful recruitment and attainment of BMT nursing proficiency. The program included didactic education, an orientation manual and clinical orientation with a dedicated preceptor. Clinical orientation was designed according to a BMT Orientation Pathway, with three tracks individualized and varied in length according to prior nursing and BMT experience, if any (see Table 1).

Clinical orientation requires a significant financial investment and the length of orientation became a concern. Nursing Leadership partnered with Human Resources and the local unemployment office to investigate opportunities for economic stimulus funds to

partially fund the internship program. An ongoing partnership with the local unemployment office will also create local sourcing and networking opportunities for viable nursing candidates, as well as the potential to receive funding through other designed programs.

Over a 15-month period, 41 nurses were recruited for the BMT Internship Program and were orientated according to the appropriate track (see Table 1). The program had a 90% success rate with 37 nurses as new members of the BMT inpatient nursing team. Successes and challenges of the BMT Internship Program have included preceptor burnout and organizational issues as well as a change in nursing culture. Future directions include preceptor support and continued growth of the individual and collective BMT nursing expertise.

Table 1. BMT Orientation Pathways

	Type of RN	Length of Orientation	Number of Orientees
Track 1	Novice (New RN or Nurse < 2 years)	15 - 24 weeks	15
Track 2	Advanced Beginner (Nurse with experience in Med-Surg, Heme/Onc, or Critical Care)	7 - 14 weeks	22
Track 3	Expert (Nurse with BMT experience)	4 - 6 weeks	4

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USE OF "RAPID-CYCLE" FAILURE MODE AND EFFECTS ANALYSIS (FMEA) AND SIMULATION TO SAFELY TRANSITION HEMATOPOIETIC STEM CELL (HSC) PROCESSING SERVICES

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When Children's Memorial Hospital (CMH) closed their hematopoietic stem cell (HSC) processing laboratory and contracted with the affiliated Northwestern Memorial Hospital for processing services, it required substantial practice changes and introduced potential safety risks. The 3-month transition timeline required the transplant program to make optimal use of time and resources. "Rapid-cycle" FMEA followed by simulation was used to evaluate, refine and test the process changes required for this transition.

Failure mode and effects analysis (FMEA) is a systems-oriented, prospective approach to process improvement and risk reduction. FMEA identifies potential process fail-points, assesses their level of risk, and helps prioritize response with the goal of reducing error occurrence and/or mitigating harm. Traditional FMEA is effective but time-intensive. The "rapid-cycle" adaptation focuses on efficient use of FMEA meeting time and reduces clinician stakeholder's involvement to two meetings (see table 1).

To keep the scope manageable, two "rapid-cycle" FMEAs were conducted. An inter-facility FMEA focused on information and cell hand-off, and included representation from the hospital, processing facility, and courier company. A second, intra-facility FMEA focused on process changes occurring within the clinical program.

The joint FMEA sessions identified 51 potential failure modes. Failure modes were scored for severity, frequency and detectability; those identified as high or moderate severity were corrected. The two items identified as highest risk were (1) incomplete or inaccurate chain of custody documentation and (2) incomplete information hand-off between the two institutions. These fail-points were part of a new process step that required hand-off of cells from CMH to the outside processing facility via courier. The process was revised using recommendations developed during the FMEAs, then tested before the move using simulation.

Sequential use of "rapid-cycle" FMEA followed by simulation allowed the stem cell transplant program to 'design out' potential

failures while still adhering to the transition timeline. Clinician assessment of the FMEA process using a 5-point Likert scale found that participants felt the 'rapid-cycle' model was effective and efficient. Post-transition assessment of patient engraftment, graft failure, and safety event reports provide initial confirmation that product and patient safety were maintained during this transition.

Traditional vs. "Rapid-cycle" FMEA

	Traditional FMEA	"Rapid-cycle" FMEA
Purpose	A systems-oriented, prospective approach that identifies potential process fail-points, assesses their level of risk, and helps prioritize response with the goal of reducing error occurrence and/or mitigating harm	
Facilitator responsibilities	Coordinate FMEA meetings - provide expertise and accountability.	Coordinate FMEA. Prepare initial process flows. Begin failpoint identification. Calculate risk priority numbers and categorize failure modes (high, moderate or low severity).
Group member (Clinician) responsibilities	Perform process mapping. Identify and score failure modes. Calculate risk priority numbers and categorize failure modes (high, moderate or low severity). Identify corrective actions.	Focus on failure mode identification, scoring and correction.
Meeting requirements	6-12	2
Timeline	4-12 months	2-4 months

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A HEMATOPOIETIC STEM CELL TRANSPLANT QUALITY, CLINICAL, CELLULAR DASHBOARD: WHAT IS THE EVIDENCE?

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Identifying HSCT clinical, quality, cellular indicators with valid benchmarks is essential to evaluate quality of care and provides direction for program management and growth (strategic planning). Indicators and benchmarks are selected based on level of evidence (clinical trial results, survey reports, international and national research data bases), best practices among centers, and institutional reports. This paper describes the process that an academic institution used to develop and maintain an up-to-date HSCT clinical, quality, cellular dashboard. Using a review of the above literature, HSCT indicators were evaluated based on the following five categories: 1) level of priority (relevance), 2) established benchmarks, 3) relationship between process and outcomes, 4) measurable with numerator and denominator, and 5) ease of data collection. To explore how variations in institutional and administrative infrastructure, patient population served, and practice and treatment patterns influences outcomes and establishment of benchmarks, a critique of the literature that examined the following indicators was conducted: microbial contamination of product, blood stream infections, time to engraftment, ICU admissions, length of stay, mortality, grade 3 - 4 toxicities. The dashboard guides the Quality & Performance Improvement Agenda. Opportunities for improvement are identified.

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CRITICAL COMPONENTS OF PATIENT SATISFACTION IN LARGE STEM CELL TRANSPLANT OUTPATIENT CLINIC

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Measuring patient satisfaction in the outpatient clinic of one of the largest stem cell transplant centers in the country is important to ongoing improvement of the program. It is also a key activity of clinical administrative staff in their quest to improve clinic functions. Nursing leaders in the Stem Cell Transplant Outpatient Clinic identified and measured three targeted patient satisfaction areas, and based on their findings, implemented changes. The focus areas included phone communication, continuity of care, and "wait times". A patient survey process and questions were developed. Survey questions included items about ease of contacting clinic staff, how long they were placed on hold, and if staff returned calls. Patients were asked if they knew their team, were informed of tests, and received consistent information. They were also surveyed about length of wait times and time from arrival to seeing their physician, perceptions of acceptable wait times and whether they were kept informed. Over 100 patients have been surveyed at 6-month intervals with return rates exceeding 80%. Based on survey findings in these areas, improvements were made including installation of a new phone system, voicemail guidelines, a team member sheet, and revision of education materials. Measurement and evaluation of patient satisfaction continues to be an important role for the SCT leaders. Utilizing the survey process, the team is able to review results and implement action plans for improvement. Staff involvement has been key to the success of this process. Discussion of results, action plans, and outcomes are done at staff meetings. Continual follow-up and evaluation are necessary to assure improvements are sustained. The findings and improvements made by the SCT leadership team may be useful to other nurse leaders and staff in their efforts to improve patient satisfaction, a key component to the success of the SCT journey.

TRANSPLANT NURSING: RESEARCH

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COLONIZATION OF TOTAL PARENTERAL NUTRITION ADMINISTRATION SETS IN IMMUNOCOMPROMISED CHILDREN

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Purpose: To determine the incidence of bacterial and yeast colonization in total parenteral nutrition (TPN) fluid administration sets in immunocompromised children and to explore the incidence of infusate-related bloodstream infection (BSI) in this group of patients.

Background: Routine replacement of IV administration sets has been advocated to prevent infectious complications of IV therapy (deMoissac, 1998). Research studies to date provide no data for infusate-related BSI that compares administration set changes at intervals of 72 hours and 96 hours among patients receiving TPN (Gillies, 2004).

Sample and Methods: The sample included 14 immunocompromised children who were receiving TPN. Five infusate fluid samples were collected from each patient for a total of 69 samples. Qualitative cultures of the TPN fluid were obtained to determine the incidence of colonization with bacteria and yeast. A 1 ml sample of TPN fluid was obtained at times 0, 24, 48, 72 and 96 hours after a new TPN administration set change. Specimens were obtained from the injection port immediately above the filter. TPN fluid bags were changed every 24 hours.

Results: Twelve bone marrow transplant patients and two oncology patients with double lumen central lines participated in the study. None of the TPN infusate fluid samples were colonized with bacteria or yeast at any of the data collection time points.